

1. An electronic imaging system comprising:

a sensor having a first color region, a second color region, and a third color region; and

a prism system comprising:

5 a first prism having a first index of refraction and overlying said first color region wherein said first prism directs incident light of said first color to said first color region of said sensor;

10 a second prism having a second index of refraction and overlying said second color region wherein said second prism directs incident light of said second color to said second color region of said sensor; and

15 a third prism having a third index of refraction and overlying said third color region wherein said third prism directs incident light of said third color to said third color region of said sensor.

2. The system according to Claim 1 wherein said first, second, and third color regions comprise red, green, and blue.

3. The system according to Claim 1 wherein said first, second, and third indexes of refraction each differ one from another.

4. The system according to Claim 1 wherein said first, second, and third prisms comprise first, second, and third heights, respectively, and wherein said first, second, and third heights each differ one from another.

5. The system according to Claim 1 wherein each said prism has a topmost surface and wherein each said topmost surface is angled with respect to the topmost surface of said sensor.

6. The system according to Claim 1 wherein said second color region is arranged between said first and third color regions, wherein said first prism transmits a first part of polychromatic incident light to said first color region and reflects a second part of said polychromatic incident light to said second prism, wherein said second prism reflects a third part of said polychromatic incident light to said second color region and transmits a fourth part of said polychromatic incident light to said third prism, and

10 wherein said third prism reflects a fifth part of said polychromatic incident light to said third color region and transmits a sixth part of said polychromatic incident light.

7. The system according to Claim 6 wherein said first part, said third part, and said fifth part are each about one third of said polychromatic incident light.

8. The system according to Claim 6 wherein said first, second, and third color regions comprise red, green, and blue.

9. The system according to Claim 1 wherein said sensor comprises a single die of an semiconductor circuit wafer.

10. An electronic imaging system comprising:

a sensor having a first color region, a second color region, and a third color region wherein said first, second, and third color regions comprise red, green, and

5 blue; and

a prism system comprising:

a first prism having a first index of refraction
and overlying said first color region wherein said
first prism directs incident light of said first color
10 to said first color region of said sensor;

a second prism having a second index of
refraction and overlying said second color region
wherein said second prism directs incident light of
said second color to said second color region of said
15 sensor; and

a third prism having a third index of refraction
and overlying said third color region wherein said
third prism directs incident light of said third color
to said third color region of said sensor.

11. The system according to Claim 10 wherein said first,
second, and third indexes of refraction each differ one
from another.

12. The system according to Claim 10 wherein said first,
second, and third prisms comprise first, second, and third
heights, respectively, and wherein said first, second, and
third heights each differ one from another.

13. The system according to Claim 10 wherein each said prism has a topmost surface and wherein each said topmost surface is angled with respect to the topmost surface of said sensor.

14. The system according to Claim 10 wherein said second color region is arranged between said first and third color regions, wherein said first prism transmits a first part of polychromatic incident light to said first color region and
5 reflects a second part of said polychromatic incident light to said second prism, wherein said second prism reflects a third part of said polychromatic incident light to said second color region and transmits a fourth part of said polychromatic incident light to said third prism, and
10 wherein said third prism reflects a fifth part of said polychromatic incident light to said third color region and transmits a sixth part of said polychromatic incident light.

15. The system according to Claim 14 wherein said first part, said third part, and said fifth part are each about one third of said polychromatic incident light.

16. The system according to Claim 10 wherein said sensor comprises a single die of an semiconductor wafer.

17. A method to form an electronic imaging system comprising:

forming a plurality of light sensors on a semiconductor wafer; and

5 forming a plurality of prisms overlying said light sensors wherein each said prism overlies one said light sensors, wherein each said prism has an index of refraction, wherein each said prism has a height, and wherein each said prism directs incident light of a color
10 to said light sensor underlying said prism.

18. The method according to Claim 17 wherein said prisms comprise first, second, and third said indexes of refraction corresponding to first, second, and third said colors.

19. The method according to Claim 17 wherein said prisms comprise first, second, and third said heights corresponding to first, second, and third said colors.

20. The method according to Claim 17 wherein each said prism has a topmost surface and wherein each said topmost surface is angled with respect to the topmost surface of said sensor.

21. The method according to Claim 17 wherein said light sensors comprise first, second, and third color regions, wherein each said second color region is arranged between one of said first and one of said third color regions,
5 wherein first said prisms overlies said first color regions, transmit a first part of polychromatic incident light to said first color regions, and reflect a second part of said polychromatic incident light to second said prisms, wherein said second prisms overlies said second color regions,
10 reflect a third part of said polychromatic incident light to said second color regions, and transmit a fourth part of said polychromatic incident light to third said prisms, and wherein said third prisms reflect a fifth part of said polychromatic incident light to said third color regions
15 and transmit a sixth part of said polychromatic incident light.

22. The method according to Claim 21 wherein said first part, said third part, and said fifth part are each about one third of said polychromatic incident light.

23. The method according to Claim 21 wherein said first, second, and third color regions comprise red, green, and blue.

24. The method according to Claim 17 further comprising sawing said semiconductor substrate in areas between said light sensors to form tri-color sensors comprising three said light sensors and three said prisms.

25. The method according to Claim 17 further comprising sawing said semiconductor substrate in areas between said light sensors to form single color sensors comprising one said light sensor and one said prism.